

Gold King Mine Discharge

8/10/2015

8/13/2015

8/15/2015

DISSOLVED METALS

Aluminum (ug/L)	35000	36000	34000
Antimony (ug/L)	0.5 J	10	3.7
Arsenic (ug/L)	3.7	140	44
Barium (ug/L)	8.9	12	8.6
Beryllium (ug/L)	11	11	11
Cadmium (ug/L)	65	66 B	82
Calcium (ug/L)	380000	360000	370000 B
Chromium (ug/L)	2.7	8.6	5.5
Cobalt (ug/L)	110	110	110
Copper (ug/L)	6000 E	6100 E	4600 E
Iron (ug/L)	120000	370000	150000
Lead (ug/L)	32	78	42
Magnesium (ug/L)	33000	26000	27000
Manganese (ug/L)	33000 E	34000 E	36000
Mercury (ug/L)	0.08 U	0.08 U	0.08 U
Molybdenum (ug/L)	0.84 J	16	4.2
Nickel (ug/L)	72	69	69
Potassium (ug/L)	2700	2700	2400
Selenium (ug/L)	1.7 JB	4.8	4.7 B ^
Silver (ug/L)	0.1 U	0.33 J	0.1 J
Sodium (ug/L)	3900	480 U	5300
Thallium (ug/L)	0.32	0.35	0.29
Vanadium (ug/L)	2	87	38
Zinc (ug/L)	25000 E	26000 E	20000 E

TOTAL METALS AND MISC

Alkalinity (mg/L)	NA	5 U	5 U
Aluminum (ug/L)	38000	36000	33000
Antimony (ug/L)	4.3	9.4	0.62 J
Arsenic (ug/L)	49	130 B	5.5
Barium (ug/L)	9.5	11 B	8.7
Beryllium (ug/L)	11	11	11
Cadmium (ug/L)	67	68	85
Calcium (ug/L)	380000	380000	380000 B
Chloride (mg/L)	NA	0.34 J	0.36 J
Chromium (ug/L)	5.7	7 ^	3
Cobalt (ug/L)	120	110	110
Copper (ug/L)	6300 E	6000 E	4600 E
Fluoride (mg/L)	NA	11	10
Iron (ug/L)	190000	310000	120000
Lead (ug/L)	51	69	29
Magnesium (ug/L)	28000	28000	27000
Manganese (ug/L)	34000 E	35000 E	36000

Mercury (ug/L)	0.08 U	0.08 U	0.08 U
Molybdenum (ug/L)	4.8	14	0.77 J
Nickel (ug/L)	74	70	72
Nitrate as N (mg/L)	NA	0.023 U	0.023 U H
pH	NA	3.06 HF	2.93 HF
Potassium (ug/L)	2900	2700	2500
Selenium (ug/L)	2.5 ^	4.3 B^	3.3 ^ B
Silver (ug/L)	0.15 J	0.3 J	0.1 U
Sodium (ug/L)	4000	4800 U	5200
Sulfate (mg/L)	NA	1600	1600
Thallium (ug/L)	0.33	0.35	0.29
Total Hardness (mg/L)	1100	1100	1100
Total Suspended Solids (r	66	NA	NA
Vanadium (ug/L)	44	71 E	2.5
Zinc (ug/L)	27000 E	26000	20000 E

NA	Not analyzed
E	Result exceeded sample range
U	The analyte was analyzed for but not detected
J	The result is less than the reporting limit but greater than or equal to the MDL and the con
^	Instrument related QC is outside acceptance limits

centration is an approximate value.

Pond System Discharge

DISSOLVED METALS	8/11/2015	8/13/2015	8/15/2015
Analyte	Result	Result	
Aluminum (ug/L)	8500	11000	28000
Antimony (ug/L)	0.4 U	1.4	1.5
Arsenic (ug/L)	0.37 U	13	16
Barium (ug/L)	9.4	9.1	8.5
Beryllium (ug/L)	3.4	3.6	9
Cadmium (ug/L)	80	70 B	80
Calcium (ug/L)	340000	340000	350000 B
Chromium (ug/L)	1 U	1.4 J	3.3
Cobalt (ug/L)	100	93	100
Copper (ug/L)	2800	1800	3900 E
Iron (ug/L)	63000	90000	96000
Lead (ug/L)	2.6	16	24
Magnesium (ug/L)	26000	26000	26000
Manganese (ug/L)	30000 E	29000 E	31000
Mercury (ug/L)	0.08 U	0.08 U	0.08 U
Molybdenum (ug/L)	0.64 J	2.2	1.4
Nickel (ug/L)	58	55	68
Potassium (ug/L)	2300	2300	2200
Selenium (ug/L)	0.58 U	3.1	3.8 B ^
Silver (ug/L)	0.1 U	0.11 J	0.1 U
Sodium (ug/L)	120000 E	150000 E	52000
Thallium (ug/L)	0.25	0.25	0.23
Vanadium (ug/L)	0.3 U	9.7	14
Zinc (ug/L)	22000 E	19000 E	18000 E
TOTAL METALS AND MISC			
Alkalinity	5 U	5 U	5 U
Aluminum	21000	11000	26000
Antimony	1.3	1.3	0.4 U
Arsenic	12	14 B	1.2
Barium	9.5	9.3 B	9
Beryllium	6.6	3.5	8.6
Cadmium	79	71	84
Calcium	340000	350000	360000 B
Chloride	0.9	2.8	1.2
Chromium	2.6	1.1 J^	1 U
Cobalt	99	95	100
Copper	3900 E	1800	3800 E
Fluoride	7.2	5.5	8.9
Iron	99000	87000	70000
Lead	22	16	11
Magnesium	26000	27000	28000
Manganese	29000 E	30000 E	32000

Mercury	0.08 U	0.08 U	0.08 U
Molybdenum	1.6	2.3	0.45 U
Nickel	60	57	70
Nitrate as N	0.046 U	0.023 U	0.025 J H
pH	4.59 J	4.52 HF	3.19 HF
Potassium	2300	2400	2200
Selenium	0.58 U	3.9 B^	3.2 ^ B
Silver	0.11 J	0.11 J	0.1 U
Sodium	120000 E	140000	54000
Sulfate	1400	1400	1400
Thallium	0.27	0.27	0.23
Total Hardness	950	980	1000
Vanadium	13	8.4	0.3 U
Zinc	21000 E	20000 E	18000 E

NA	Not analyzed
E	Result exceeded sample range
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J	The result is less than the reporting limit but greater than or equal to the MDL and the con
^	Instrument related QC is outside acceptance limits

centration is an approximate value.

Location	GKM 8/10/2015	Ponds 8/11/2015	% Removal in Ponds	GKM 8/13/2015	Ponds 8/13/2015
DISSOLVED METALS					
Aluminum (ug/L)	35000	8500	76%	36000	11000
Antimony (ug/L)	0.5	0.4 U	NA	10	1.4
Arsenic (ug/L)	3.7	0.37 U	NA	140	13
Barium (ug/L)	8.9	9.4	-6%	12	9.1
Beryllium (ug/L)	11	3.4	69%	11	3.6
Cadmium (ug/L)	65	80	-23%	66	70
Calcium (ug/L)	380000	340000	11%	360000	340000
Chromium (ug/L)	2.7	1 U	NA	8.6	1.4
Cobalt (ug/L)	110	100	9%	110	93
Copper (ug/L)	6000	2800	53%	6100	1800
Iron (ug/L)	120000	63000	48%	370000	90000
Lead (ug/L)	32	2.6	92%	78	16
Magnesium (ug/L)	33000	26000	21%	26000	26000
Manganese (ug/L)	33000	30000	9%	34000	29000
Mercury (ug/L)	0.08 U	0.08 U	NA	0.08 U	0.08 U
Molybdenum (ug/L)	0.84	0.64	24%	16	2.2
Nickel (ug/L)	72	58	19%	69	55
Potassium (ug/L)	2700	2300	15%	2700	2300
Selenium (ug/L)	1.7	0.58 U	NA	4.8	3.1
Silver (ug/L)	0.1 U	0.1 U	NA	0.33	0.11
Sodium (ug/L)	3900	120000	-2977%	480 U	150000
Thallium (ug/L)	0.32	0.25	22%	0.35	0.25
Vanadium (ug/L)	2	0.3 U	NA	87	9.7
Zinc (ug/L)	25000	22000	12%	26000	19000
TOTAL METALS AND MISC					
Alkalinity (mg/L)	NA	5 U	NA	5 U	5 U
Aluminum (ug/L)	38000	21000	45%	36000	11000
Antimony (ug/L)	4.3	1.3	70%	9.4	1.3
Arsenic (ug/L)	49	12	76%	130	14
Barium (ug/L)	9.5	9.5	0%	11	9.3
Beryllium (ug/L)	11	6.6	40%	11	3.5
Cadmium (ug/L)	67	79	-18%	68	71
Calcium (ug/L)	380000	340000	11%	380000	350000
Chloride (mg/L)	NA	0.9	NA	0.34	2.8
Chromium (ug/L)	5.7	2.6	54%	7	1.1
Cobalt (ug/L)	120	99	18%	110	95
Copper (ug/L)	6300	3900	38%	6000	1800
Fluoride (mg/L)	NA	7.2	NA	11	5.5
Iron (ug/L)	190000	99000	48%	310000	87000
Lead (ug/L)	51	22	57%	69	16
Magnesium (ug/L)	28000	26000	7%	28000	27000
Manganese (ug/L)	34000	29000	15%	35000	30000

Mercury (ug/L)	0.08 U	0.08 U	NA	0.08 U	0.08 U
Molybdenum (ug/L)	4.8	1.6	67%	14	2.3
Nickel (ug/L)	74	60	19%	70	57
Nitrate as N (mg/L)	NA	0.046 U	NA	0.023 U	0.023 U
pH	NA	4.59	NA	3.06	4.52
Potassium (ug/L)	2900	2300	21%	2700	2400
Selenium (ug/L)	2.5	0.58 U	NA	4.3	3.9
Silver (ug/L)	0.15	0.11	27%	0.3	0.11
Sodium (ug/L)	4000	120000	-2900%	4800 U	140000
Sulfate (mg/L)	NA	1400	NA	1600	1400
Thallium (ug/L)	0.33	0.27	18%	0.35	0.27
Total Hardness (mg/L)	1100	950	14%	1100	980
Total Suspended Solids (r	66	NA	NA	NA	NA
Vanadium (ug/L)	44	13	70%	71	8.4
Zinc (ug/L)	27000	21000	22%	26000	20000

NA Not analyzed Not analyzed
 E Result exceeded Result exceeded sample range
 U The analyte was The analyte was analyzed for but not detected
 J The result is less The result is less than the reporting limit but greater than or equal to the
 ^ Instrument relat Instrument related QC is outside acceptance limits

% Removal in Ponds	GKM 8/15/2015	Ponds 8/15/2015	% Removal in Ponds
69%	34000	28000	18%
86%	3.7	1.5	59%
91%	44	16	64%
24%	8.6	8.5	1%
67%	11	9	18%
-6%	82	80	2%
6%	370000	350000	5%
84%	5.5	3.3	40%
15%	110	100	9%
70%	4600	3900	15%
76%	150000	96000	36%
79%	42	24	43%
0%	27000	26000	4%
15%	36000	31000	14%
NA	0.08 U	0.08 U	NA
86%	4.2	1.4	67%
20%	69	68	1%
15%	2400	2200	8%
35%	4.7	3.8	19%
67%	0.1	0.1 U	NA
NA	5300	52000	-881%
29%	0.29	0.23	21%
89%	38	14	63%
27%	20000	18000	10%
NA	5 U	5 U	NA
69%	33000	26000	21%
86%	0.62	0.4 U	NA
89%	5.5	1.2	78%
15%	8.7	9	-3%
68%	11	8.6	22%
-4%	85	84	1%
8%	380000	360000	5%
-724%	0.36	1.2	-233%
84%	3	1 U	NA
14%	110	100	9%
70%	4600	3800	17%
50%	10	8.9	11%
72%	120000	70000	42%
77%	29	11	62%
4%	27000	28000	-4%
14%	36000	32000	11%

NA	0.08 U	0.08 U	NA
84%	0.77	0.45 U	NA
19%	72	70	3%
NA	0.023 U	0.025	NA
-48%	2.93	3.19	-9%
11%	2500	2200	12%
9%	3.3	3.2	3%
63%	0.1 U	0.1 U	NA
NA	5200	54000	-938%
13%	1600	1400	13%
23%	0.29	0.23	21%
11%	1100	1000	9%
NA	NA	NA	NA
88%	2.5	0.3 U	NA
23%	20000	18000	10%

NA is not the appropriate value.